

Appl. № 10/754,800


Amdt. dated: August 16, 2006

Reply to Office action of May 19, 2006

Amendments to the Drawings:

The amendments to the Drawings are fulfilled in compliance with the comments and requirements of the Expertise (Office action of 05/19/2006). The set of the amended drawings attached hereto includes 2 (two) Replacement Sheets and 7 (seven) New Sheets. The amendments to the Drawings have been made in accordance with 37 CFR § 1.81, § 1.83, § 1.84, and § 1.121. These amended Drawings include no new matters while having explained the subject matter of the invention disclosed in Specification and Claims thereof. These amended drawings will replace all prior versions of drawings in the application: "Method of Defense-in-Depth Ultrasound Intrusion Detection".

Respectfully submitted, CTRL Systems, Inc.

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REMARKS/ARGUMENTS

The applicant agrees with Expertise on inevitability of amendments to Drawings, Specification and Claims of application No.: 10/754,800 for the purpose of "... distinctly claiming the subject matter which the applicant regards as his invention" (Second paragraph of 35 U.S.C. §112). Meanwhile, the applicant is confident of the novelty of the invention "Method of Defense-in-Depth Ultrasound Intrusion Detection", see attached hereto **Table 1** with explanations of concern.

Amendments to the Drawings:

The applicant has amended previously submitted drawings, defined at present as Replacement Sheets, and furnished new drawings, defined as New Sheets, in compliance with 37 CFR § 1.121(d). In accordance with 37 CFR § 1.181 this set of amended drawings has been accomplished in the graphical and diagrammatic views, graphical flow charts, and in tabular formats of flowsheets that reveal in the logical order the subject matter of the invention. All the corrections to the Drawings have been made in correlation with Specification and Claims as regards matters, terms and definitions. The amended drawings contain perfect explanations of features of the invention that were required by Expertise (see point 1 in Office Action letter of 05/19/2006) with the exception of those conventional features [see 37 CFR § 1. 83(a)] that have been disclosed in the description and claims, see attached hereto **Table 2**.

Amendments to the Specification:

The Specification, including the abstract of the disclosure, has been currently amended in accordance with the remarks and suggestions of the Expertise (Office action of 05/19/2006), and requirements of 37 CFR § 1.71 and 37 CFR §1.77 (b) to clearly specify the subject matter of the present invention. The said subject matter consists in new and useful improvement on the process of detection of intruder's presence, locality and parameters of motion by innovative method of spatio-temporal ultrasound location of a target where the useful improvements thereof consist in sufficient enhancement of reliability and increase of distance of ultrasonic location for ultrasound intrusion detection and protection technology (see 35 U.S.C. § 101). Due to the amendments to the Drawings, the amendments to the Specification include the detailed description of: the alternative embodiment of the arrangement of spatial multi-echelon defense-in-depth intrusion detection and protection

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REMARKS/ARGUMENTS (Continued)

system; the inter-echelon informational and processing logical interrelation in intrusion detection, justification and prevention procedures; and the procedure of treating and handling the ultrasound signals, acquired during the continuous status scan of ultrasonic detectors (i.e. receivers and transceivers), up to the logically correct decision of the goal function of the intrusion detection and protection method. The detailed description should evidently refine understanding of utilized therein the standard and conventional terms and definitions (see attached hereto **Table 2**) of ultrasound intrusion detection regarding at least:

- a) The situational modeling of the cause-effect vulnerability of protected objects in dependence on the presumptive behavior of an intruding subject or a trespasser along their possible routings throughout multi-echelon infrastructure of these object.
- b) The design stages of building of ultrasound intrusion detection and protection defense-in-depth system in accordance with the suggested method (plotting the intrusion event tree, then derivation of the decision math expressions, in particular designing the verification and decision logical matrices for treating and handling the ultrasound signals, acquired during the continuous status scan of intrusion detection system, etc.).
- c) The verifying, analyzing and resolving logical procedures for treating and handling the acquired ultrasound signals of various functionalities by the control software algorithm, which governs the ultrasonic hardware that is being minimized in assortment and power consumption on the basis of conjugation of specification figures of various ultrasonic instruments involved.

No new matter has been entered. There were used a few additional standard and conventional terms and definitions to clarify the subject matter of the invention, namely:

- d) The feature of archiving data of system's design and operating history is not new matter as it is the pertain procedure of any automatic system with feedback loops.
- e) The feature of deterministic situational logic transition (**SLT**) was used implicitly in table of former FIG.2 in the immediate prior version of Drawings. This feature pertains to all the systems that experience the logical situational analysis base on the Boolean functions for looking of situational combinations. The standard feature of Markov model is explained by figures 3, 4 and 8.
- f) The feature of single failure criterion pertains to all the multi-level protective infrastructures (e.g.

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REMARKS/ARGUMENTS (Continued)

see "Defense-in-Depth in Nuclear Safety", IAEA INSAG-10, IAEA, Vienna, 1996). This feature is presented in Specification and in Claims as the additional explanatory wording, since this single failure criterion characterizes the functional vulnerability of a system to the cause-effect damages of protected facilities and sequent losses, whereas the definition "probabilistic failure" pertains to the operating specification figures of single component or unit. So that the definition of single failure criterion is the general notion vs. the definition "probabilistic failure" that regards to the probability function of failure, see **Table 2**.

Amendments to the Claims:

Claims 1-7, 9 and 10 have been currently amended regarding remarks of examiner (see points 4-16 in Office action letter of 05/19/2006) and in compliance with requirements of at least 35 U.S.C. §112, 37 CFR §1.75 and 37 CFR §1.77 (b).

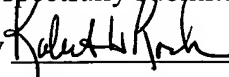
Claim 8 was canceled previously.

The currently amended Claims 1-7, 9 and 10 explain what is claimed by use of appropriate terms and definitions, see the matter of Specification and Table 2, which previously might be recognized as improper limitations due to the lack of comprehensive description of logical procedures of treating and handling the ultrasound signals of different functionalities during implementation of the novel ultrasound intrusion detection, justification, prevention and protection methodology.

No new matters have been entered. The legality of additional terms and definitions are explained in the clause of this matter of Arguments : "Amendments to the Specification".

The said amendments to the Claims haven't change the sense and art of the invention whereas in accordance with 37 CFR §1.75 (d)(1) those amendments enabled the Claims 1-7,9 and 10 to conform to the invention; and the terms and phrases used in the claims have got the antecedent basis in the description of the invention.

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Table 1 (Office Action of 05/19/2006)

Evident difference of Subject Matter among Application No.10/754,800 and US Patents contraposed by Expertise

No.	Title, Number, Class and Date of Issue	Subject Matter of Invention	Distinguishing Features	Application No. 10/754,800
1	2	3	4	5
1.	Method of Defense-in-Depth Ultrasound Intrusion Detection. Application No.10/754,800. Filing Date 01/09/2004. U.S. Class 367/93. Int. Class G01S 15/00.	Ultrasonic intrusion detection system that is spatially arranged around a protected object in a few juxtaposed areas (echelons), wherein different ultrasonic techniques of location and detection are used regarding the tasks of intrusion detection and protection that those echelons are commissioned with; where the faultless decision-making on choice of the passive or active protecting measures is being done due to the informational and processing logical interrelation among juxtaposed and non-adjacent echelons; and where this interrelation is being treated by control software algorithm of Data Processing System.	It features sufficiently enhanced remote ability of ultrasonic location due to joining neighbor areas, which dimensions and shapes are rated to the limited distance of propagation in air ambient and straight directivity of ultrasound beams. Use of logical verification of caution and self-checking signals from intrusion-suspected echelons predicts the true intrusion vindication of really affected echelon.	The distinguished novelty of invention by Application No. 10/754,800 consists in useful process of utilization of known techniques of distance-limited ultrasonic detection for innovative spatio-functional destination, namely for enhancement of ultrasonic detection remote ability over piled and bulky protected objects.
2.	Hidden PIR Motion Detector with Mirrored Optics. US Patent No. 6,346,705 B1. Date of Patent: 02/12/2002. U.S. Class 250/353. Int. Class G01J/02.	Passive infra-red (PIR) motion detector assembly that consists of PIR sensor and mirror assembly, which includes a number of mirror faces that define a number of monitored zones in the wide-angle horizontally, vertically multi-level field of view. The viewing angle of detector has been enlarged due to the disposition of mirror faces at the distal extremities of the said assembly. Each mirror is directed to prior allocated near, mid or relatively far places of surveyed area.	The apparatus is destined for motion detection of heat-radiating subject with sequent reflection of infra-red beams by array of mirrors to the singular embedded PIR sensor. If this device or moving target were either shaded or suppressed by electro-magnetic field, all the detection would fail.	The invention by Application No. 10/754,800 features the distributed arrangement of ultrasonic detectors over near, mid and far echelons of a protected object. It shall compensate the fast attenuation of signals in air and so improve reliability.

Continued Table 1 (Office Action of 05/19/2006)

No.	Title, Number, Class and Date of Issue	Subject Matter of the Invention	Distinguishing Features	Application No. 10/754,800
1	2	3	4	5
3.	Passive Infrared Detector. US Patent No. 6,262,661 B1. Date of Patent: 07/17/2001. U.S. Class 340/567. Int. Class G08B 13/18.	Passive infrared detector that consists of the optical anti-masking device, one separate channel of passive infrared sensor (PIR), and logical circuit of evaluation. The anti-masking device consists of: one <u>proximity-latch (PL)</u> channel that rapidly responds to the predetermined criteria of masking signal and doesn't restore itself automatically after this masking signal has gone shortly; and one <u>real-time (RT)</u> channel, that only slowly responds to very large and stable changes in preset high values of masking signals and restores itself automatically in preset time delay. The masking alarm signal and/or intrusion alarm signal are being triggered in the result of processing PL, RT and PIR signals by a simple algorithm of combinational logic.	Passive infrared detector is characterized in that: * in each channel, the signal is being evaluated by comparison with at least one threshold or reference value; * in each channel various values are defined for pre-alarm stages regarding the reference values of alarm stages; and signals are compared with the pre-alarm and alarm stages; * associated evaluation of signals of PL and RT channels of anti-masking device is combined with that evaluation of the signals of the PIR.	Application No. 10/754,800 reveals such distinctive and novel features as: * the ultrasound intrusion detection is being fulfilled due to the informational and logical inter-relation among several juxtaposed areas on the basis of evaluation of threat to the protected objects therein; * the use of different modes of response of ultrasound signals fits various models of spatio-temporal behavior of intruder.
4.	Motion Prediction within an Amorphous Sensor Array. US Patent No. 6,885,303 B2. Date of Patent: 04/26/2005. U.S. Class 340/565. Int. Class G08B 13/00.	A method, apparatus and computer program that provides for: detecting motion of an object within an amorphous sensor node array by "detecting nodes"; sensitizing nodes about "detecting nodes" and detecting the object at sensitized node, and propagating a warning signal to a distance from sensitized node in the direction of the motion of the object;	The detection and tracing of an object by the multi-level arrangement of the <u>amorphous</u> infrared sensor node array is being fulfilled in the technique of <u>stochastic</u> activation of <u>excessive</u> number of infrared sensors without prior model of intruder's route	Application No. 10/754,800 reveals such distinctive and novel features as: detection and then spatially tracing of an intruding subject or trespasser throughout the multi-echelon arrangement of the

Continued Table 1 (Office Action of 05/19/2006)

No.	Title, Number, Class and Date of Issue	Subject Matter of the Invention	Distinguishing Features	Application No. 10/754,800
1	2	3	4	5
4.	<p>Motion Prediction within an Amorphous Sensor Array. US Patent No. 6,885,303 B2. Date of Patent: 04/26/2005. U.S. Class 340/565. Int. Class G08B 13/00.</p> <p>(Continued)</p>	<p>differentiating nodes into a three-dimensional pattern, comprising pattern elements (each comprising at least one node) and using the pattern to determine which nodes are sensitizes and to determine general direction of propagation for the warning signal; differentiating a plurality of nodes into a plurality of differently oriented, overlapping sets of substantially parallel linear bands, which have a repeated band arrangement of N ordered bands; forming a mesh pattern with mesh points defined by intersections of linear bands from differently oriented overlapping sets; retransmitting the warning signal by sensitizing node with a decay factor so that the initial strength of the warning signal determines the distance to which the warning signal is propagated; detecting an object type and adjusting parameters of the steps of detecting, sensitizing, and propagation of warning signal for the particular object type; and adjusting the pattern based on the object type; activating an action mechanism by nodes based on the warning signal.</p>	<p>and without evaluation of cause-effect vulnerability of the mesh pattern due to intrusion occurrence. Since there is used a virtual pattern that emerges in the sensor system through specially designed interactions among locally communicating sensor nodes, it provides for a spatially distributed and deployed somewhat haphazardly/randomly network of means for: computing the direction of an incoming intruder with no centralized data analysis or explicit sensor data fusion; and motion prediction by use of spatially distributed processing afforded by many sensor nodes, rather then relying on more sophisticated computation within a subset of the sensor nodes.</p>	<p><u>predetermined</u> array of minimized number of the ultrasound transducers are being fulfilled in the <u>deterministic</u> mode of start up logically true sequence of signals that activate preventive and protective measures; origination of the informational and processing logical interrelation among all the echelons that is being treated by the control software algorithm of the centralized Data Processing System, which algorithm is based on predictive vulnerability of each echelon defined by previously simulated models of presumable behavior of intruding subject, and which operates continuous status scan of all the ultrasonic transceivers simultaneously.</p>

Continued Table 1 (Office Action of 05/19/2006)

No.	Title, Number, Class and Date of Issue	Subject Matter of the Invention	Distinguishing Features	Application No. 10/754,800
1	2	3	4	5
5.	<p>Intrusion Detection, Tracking, and Identification Method and Apparatus. US Patent No. 6,922,145 B2. Date of Patent: 07/26/2005.</p> <p>U.S. Class 340/541.</p> <p>Int. Class G08B 13/00.</p>	<p>Intrusion detection, tracking, and identification method where a series of ultrasonic transmitting and receiving non-scanning transducers are placed underwater at a distance on the order of a thousand feet offshore just beyond the swimming area and parallel to the beach being protected; the transducers will have a hemispherical azimuth beam width pointed away from the beach; the combined coverage area of each adjacent pair of transducers forms a grid of overlapping concentric range rings. Signal processing will place detected sonar targets in one of these grid locations. The targets will be tracked as they move from one grid location to the next. Intruder identification will be determined based on the target signal amplitude and its inherent movement pattern over a period of time. In this way, only threatening targets that approach the swimming area will cause an alert to be sounded. Since each target is tracked and its movement pattern analyzed, particular types of intruders or intruders in particular locations can be ignored.</p>	<p>Method, arrangement and apparatus by US Patent No. 6,922,145 B2. are based on the reference echolocation practice by use of Doppler effect. It's evident, that the graphic-analytical procedure for processing the reflected signals derives errors due to the following:</p> <ul style="list-style-type: none"> * The generation of range rings by the pulse mode emission from adjacent non-scanning transducer sites predicts interference of waves in the points of their intersection, which could create mistaken data on intruder's place; * The elimination approach to the group of targets may result in false vector detection of the eliminated target; * The simultaneous use of Cartesian, polar and elliptical coordinates makes the processing procedure and hardware complex and unreliable. 	<p>Application No. 10/754,800 features such distinctive and novel properties as:</p> <ul style="list-style-type: none"> * The intruder's position is being fixed by disturbance of beam pattern of particular transducer with known position; * The arrangement of all the ultrasound transducers in every echelon and chosen modes of signals' emission-receiving eliminates mistakes because of signals' interference; * The reliable logical interrelation among all the echelons has been provided by the previous modeling of protected object's vulnerability on the basis of presumptive behavior of intruding subject and by use of verification and decision logics.

Continued Table 1 (Office Action of 05/19/2006)

No.	Title, Number, Class and Date of Issue	Subject Matter of the Invention	Distinguishing Features	Application No. 10/754,800
1	2	3	4	5
6.	Intrusion Sensing System. US Patent No. 6,127,926. Date of Patent: 10/03/2000. U.S. Class 340/541. Int. Class G08B 13/00.	Intrusion sensing system that provides for vertical surface protection in a security installation by detecting disturbances in a microwave beam sent from a transmitter to a receiver, both installed substantially above the ground and adjacent to the vertical surface. Additional perimeter security of metal scaffold is being done by the circular polarization of microwave beams. The system can combine triple detection technology: Doppler shift; passive and active infrared detection.	Protecting only vertical surface of metal scaffold, the system doesn't secure the internal premises of the building that might be intruded in hold-off time. The system fails to differ authorized worker from dangerous intruder that may appear at separate scaffold's levels. Use of triple detection methods shall complicate system.	Application No. 10/754,800 features such distinctive and novel properties as: Use of multi-echelon ultrasound detection enables exterior and interior security. Since only ultrasonic technology is used, minimization of the detection system is evidently possible.
7.	Logical Pet Immune Intrusion Detection Apparatus and Method. US 2005/0040947 A1. Pub. Date: 02/24/2005. U.S. Class 340/567. Int. Class G08B 13/18.	The system and method for detecting human intrusion while ignoring the motion of the small animals, such as dogs and cats, when operating in a pet-immune mode. The configuration of the system allows making a switch between pet-immune and non-pet-immune modes. The system includes a security sensor that provides common mode rejection horizontally while detecting human intrusion in response to activity detected in non-overlapping zones on multiple sensors spanning the vertical direction.	Rejection of application of Fresnel lenses results in disintegration of area of surveillance. The system doesn't focus on the horizontal dimensions of an intruder therefore the approach to making a switch between pet-immune and non-pet-immune modes seems be mistaken, since initially detected an apparent low-sized and low-emission subject may occur not an animal but a crawling up human. This property insinuates doubt in apt logical basics thereof.	Application No. 10/754,800 reveals such novel features: It permits to define the size of intruder, number of intruders, and their distribution over protected area not ignoring anyone. Logical control of intrusion detection is based on preliminary modeling of cause-effect menaces due to assumed intruder's behavior; and it is being initiated by the logical verification of intrusion signals.



**Table 2 (Office Action of 05/19/2006)
Explanation of technicalities and definitions of physical phenomena used in narrations of Application No.: 10/754,800.**

Technicalities, Definitions of Physical Phenomena. Remarks of Expertise.	Rate of applicability of cited Technicalities and Definitions.	Points of Office Action letter of 05/19/2006 with enquires and remarks of Expertise.	Where and how have been explained the technicalities and Definitions of Physical Phenomena used herein. How have been answered the Expertise's remarks.	Notes.
1	2	3	4	5
Intrusion event tree.	Standard.	Point 1. Drawings.	The tabular format of an event tree is shown at new FIG.4 and explained in the description therein.	This technicality is widely used in R&D by skilled ones.
Cause-effect relations.	Conventional.	Point 1. Drawings.	The cause-effect relations among intrusion events and sequent threats, rated by factors of menaces, are shown by new FIG. 4 and FIG. 8.	The cause-effect phenomenon belongs to every developing process in Nature.
Derivation of mathematical expressions, including the generalized resolving logical equation (GRLE).	Standard.	Point 1. Drawings.	The new FIG.8 illustrates derived logical equations for estimation of intrusion threat, or menaces. These equations are being derived due to previously plotted intrusion event tree shown at the new FIG.4.	The operators and equations of Boolean algebra opened way to application of the situational models to security challenges.
The resolver.	Standard.	Point 1. Drawings.	The resolver is the standard block of any automatic system that possesses the function of the logical control. So, any logical resolver may be used, provided it meets the technical requirements of a security system.	The apt standard resolver is usually being chosen in accordance with the perfect performance I/O specification.
Security measures of active and passive protection ... enclosing physical barriers around ... installations, entrapping a trespasser, and entrappings along the presumed routings.	Conventional in the physical security practice.	Point 1. Drawings.	The passive protection consists in enclosing physical barriers (e.g. closing doors in partitions) around the protected installations (oil-filled transformers, control consoles, etc.). It is explained by Figures 1, 5 and 6.	The physical barriers (door, grid, hatch, turnstile etc.) prevent trespasser's motion, entrapping him on his way of intrusion.

Continued Table 2 (Office Action of 05/19/2006)

1	2	3	4	5
Use of disabling tear gas, involving the guard troops, or opening the defensive fire therein.	Standard, used in practice of protection and defense of critical objects.	Point 1. Drawings.	These terms regard to the measures of active protection. These measures are being undertaken in the result of decision of the goal function , i.e. entry the signals, activating them.	These features are explained in brief descriptions of FIG.7 and FIG.8.
Responding in reflection or refraction by edge diffraction modes. Attenuation ... occurred to a value not less than the dead band of ultrasonic transceivers.	Standard, applied in technologies that use features of the airborne ultrasound waves.	Point 1. Drawings.	The valued advantages of airborne ultrasound would be successfully used, provided there were obeyed the conditions of its propagation with minimal energy loss due to its attenuation along the emission trip.	These conditional features are actually explained in the brief summary of the invention and also specified in Claim 3.
Center (operating) frequency and bandwidth of ultrasound emission, S/N ratio, type of signal processing domain, frequency adjustment.	Standard, applied in technology of acoustical location and surveillance.	Point 1. Drawings.	These terms are being usually used in comprehensive applications of acoustics, especially in processing the signals of audible sound and ultrasound frequency range.	These terms and definitions are purposely used to prove the novelty of the present invention.
Failure probability.	Standard, applied in the systems' failure statistics.	Point 1. Drawings.	The failure probability of a protected facility enables of estimation of the menace that may threaten the facility at occurrence of aggressive foe's intrusion, see FIG. 4 and FIG. 8.	Probability of failure is one of the basic specification figures of componentry of any unit or system.
The untruth proposition.	Standard, used in classical propositional logic.	Point 1. Drawings.	This term is specified in Claim 9. It must be added to and explained in the clause "The inter-echelon informational and processing logical relation..." of the Specification.	The addition of this term to Specification should comply with first paragraph of 35 U.S.C. 112.
Frontier of echelon L configured as the openwork spatial lattice. The layout chart.	Conventional, used in architecture.	Point 1. Drawings.	This narration as well as term "layout chart" are now illustrated by the new FIG.1. The synonym of "layout chart" is "erection diagram".	The structures of openwork spatial lattice are often used to support lights or sensors over an area of watch and service.

Continued Table 2 (Office Action of 05/19/2006)

1	2	3	4	5
Dead pot.	Standard, used in technique of radio-location.	Point 1. Drawings.	This term was used to establish the ultrasonic sensors arrangement principle. It is explained in description of the new FIG.1.	The dead spot is the area that was not covered by the beam patterns (Claim 7).
Proper language and format for an abstract of the disclosure.		Point 3. Specification.	The abstract of the disclosure must be properly amended.	
The formal and legal phraseology often used in patent claims, such as “means” and “said”, should be avoided.		Point 3. Specification.	The amendments must be done to Specification.	
The demand of Expertise to put claims in proper form regarding the dependency of claims.		Point 4. Claim Objection.	The format of Claims must be amended regarding the proper definition the dependency of claims.	
The enquiry of Expertise about the supposed failing of Claims 1-3, 5-7, and 9 to comply with the written description requirements.		Point 6. Claim Rejections – 35 U.S.C. § 112.	The currently amended narration of Specification contains correct descriptions of the new figures that should clarify the misunderstanding of the Expertise.	The most of remarks mentioned in this point have been clarified before by explanations done to the similar ones of Point 1.
The requirements of Expertise to explain some techniques of the subject matter of the invention.		Point 7. Claim Rejections – 35 U.S.C. § 112.	The current amendments to Claims and Specification should help to Expertise to understand properly the principle features of the subject matter of the invention.	
Is figure 2 the layout chart?	“Layout chart” is the standard term.	Point 7. Claim Rejections – 35 U.S.C. § 112.	No, it is not. The new FIG. 1 shows the axonometric view of the layout of a protected object. The layout chart is the topographical plotting of this layout in the planar format.	
Is figure 1 depicted as an open spatial lattice?		Point 7, page 5.	No, it is not. Figure 3 is a schematic view of profile of the protected area.	Present fig. 3 is the amended fig. 1.

Continued Table 2 (Office Action of 05/19/2006)

1	2	3	4	5
How is the ultrasound signal affected by the above limitations?		Point 7, page 6.	Nowise. Any ultrasound signal is the subject of further processing with use of techniques mentioned by the claims limitations therein.	
How are prognosticated conditions of the ambient air around a protected object determined – human, machine?		Point 7, page 6.	The humans must determine the average data of weather conditions at the project stage, while during the system's operation it is being done automatically by a weather station.	This approach was described properly in specification and specified in Claim 7.
Do diffraction modes consist of reflection and/or refraction?		Point 7, page 5.	The reflection, refraction and edge diffraction are different modes of ultrasound beams' behavior that are specified in narration thereof.	
Is an intruder's edge (claim 2) the same as an intruder's surface (described in the specification)?		Point 7, page 5.	The intruding subject reflects beams by surfaces but it diffracts beams by its edges so refracting them aside.	
How is an event tree formed and a cause-effect relationship established?		Point 7, page 5.	The new FIG.4 illustrates the basics of plotting the event tree that shoes the inter-echelon cause-effect relationship.	
Does a computer rate the size of each echelon or is this performed by visual inspection?		Point 7, page 5.	The rating of echelons' sizes is being done at the design stage on the basis of ultrasound remote ability, i.e. distance of waves' propagation.	It has been properly described in the Specification and specified in Claim 1.
Neither the drawings nor the specification depict any mathematical expressions.		Point 7, page 5.	The new FIG.4 shows the basics of derivation of mathematical expressions while the new FIG.8 shows their use for making logical decision matrix. The new FIG.7 shows the logical processing of those mathematical expressions, i.e. logical equations and matrices.	The mathematical expressions could not be limited by claims. What is claimed is the methodology and conditions for proper derivation of ones.

Continued Table 2 (Office Action of 05/19/2006)

1	2	3	4	5
Claims 1-7, 9 and 10 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.		Point 9, page 6.	Since Application No.:10/754,800 reveals new method, its narration contains the goal and the tasks of the invention, and techniques to resolve them. The new figures 3-9 should help to understand and believe the novelty and market value thereof.	None of applications or US patents that were contraposed by Expertise contains limitations like those of Application of Application No.:10/754,800.
Claims 1-7, 9 and 10 are rejected ... as being <i>indefinite for failing</i> to particular point out and distinctly claim the subject matter, which applicant regards as the invention.		Points 10 and 11, page 6.	The replaced and new figures, and the logical format of their sequence and description should help Examiner to discern the claim limitations.	
Claim 1 recites the limitation "the remote ability"	Standard.	Point 12, page 7.	This term is used to define possible distance of waves propagation.	It is widely used in practice of vibration.
Claim 1 recites the limitation "the dome-type volumetric room"	The composite term that contains the conventional terms.	Point 13, page 7.	It means that the volumetric room of space over a pile and bulky protected object is limited by quasi hemisphere of outdoors.	The new FIG. 1 can be helpful in understanding of this composite term.
Claim 1 recites the limitation "the spatial multi-echelon openwork structure".	The composite term with usual components.	Point 14, page 7.	It means that this structure is substantial (physical) but not virtual. It consists of components that hold spatially arranged ultrasonic sensors.	The new FIG. 1 can help to understand this composite term.
Claim 1 recites the limitation "the particular task".	Conventional.	Point 15, page 7.	It means that the task is special or separate, since there are synonyms.	That is illustrated at the new FIG. 1.
Claim 1 recites the limitation "the central echelon".	Conventional.	Point 16, page 7.	It means that this echelon is situated in the center of a protected area and surrounded by another juxtaposed short-range echelons and non-adjacent long-range peripheral echelons.	The new FIG. 1 shows such a typical arrangement.

Footnote: The scientific-and-technical explanation of standard and conventional terms, used in Application No.:10/754,800, can be retrieved by anyone from the sites of different search engines, e.g. Google.